

## CLAIMS

What is claimed is:

1. A computer implemented method for communicating between a computing  
5 system of a process module, wherein the process module has a process chamber, and a first  
sensor, comprising the steps of:

initializing the computing system of the process module;

initializing the first sensor, which is able to measure a first parameter in the  
process chamber;

10 transmitting a connect message from the first sensor to the computing system  
of the process module;

transmitting a command to get reportable specification from the computing  
system of the process module to the first sensor; and

15 transmitting a reportable specification message from the first sensor to the  
computing system of the process module.

2. The computer implemented method, as recited in claim 1, further comprising  
the steps of:

20 spawning within the computing system of the process module a connection  
monitor task;

spawning from the connection monitor task within the computing system of  
the process module a first sensor messaging task;

transmitting an acknowledgement of the command to get reportable  
specification from the first sensor to the computing system of the process module; and

transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the first sensor.

3. The computer implemented method, as recited in claim 2, further comprising the steps of:

transmitting command to get an alarm table command from the first sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the first sensor;

transmitting an alarm table from the computing system of the process module to the first sensor; and

transmitting an acknowledgement of the alarm table from the first sensor to the computing system of the process module.

4. The computer implemented method, as recited in claim 3, further comprising the steps of:

transmitting command to get time and initialization data from the first sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the first sensor;

transmitting time and initialization data from the computing system of the process module to the first sensor; and

transmitting an acknowledgement of the time and initialization data from the first sensor to the computing system of the process module.

5. The computer implemented method, as recited in claim 4, further comprising the steps of:

transmitting a process related command related to the execution of an action in the process chamber from the computing system of the process module to the first sensor;

executing the action in the process chamber, wherein said action relates to the processing of semiconductor related devices; and

transmitting an acknowledgement of the process related command from the first sensor to the computing system of the process module.

6. The computer implemented method, as recited in claim 5, further comprising the steps of:

initializing a second sensor, which is able to measure a second parameter in the process chamber;

transmitting a connect message from the second sensor to the computing system of the process module;

transmitting a command to get reportable specification from the computing system of the process module to the second sensor;

transmitting a reportable specification message from the second sensor to the computing system of the process module;

initializing a third sensor, which is able to measure a third parameter in the process chamber;

transmitting a connect message from the third sensor to the computing system of the process module;

transmitting a command to get reportable specification from the computing system of the process module to the third sensor; and

transmitting a reportable specification message from the third sensor to the computing system of the process module.

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7. The computer implemented method, as recited in claim 6, further comprising the steps of:

spawning from the connection monitor task within the computing system of the process module a second sensor messaging task;

transmitting an acknowledgement of the command to get reportable specification from the second sensor to the computing system of the process module;

transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the second sensor;

spawning from the connection monitor task within the computing system of the process module a third sensor messaging task;

transmitting an acknowledgement of the command to get reportable specification from the third sensor to the computing system of the process module; and

transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the third sensor.

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8. The computer implemented method, as recited in claim 7, further comprising the steps of:

transmitting command to get an alarm table command from the second sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the second sensor;

transmitting an alarm table from the computing system of the process module to the second sensor;

5 transmitting an acknowledgement of the alarm table from the second sensor to the computing system of the process module;

transmitting command to get an alarm table command from the third sensor to the computing system of the process module;

10 transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the third sensor;

transmitting an alarm table from the computing system of the process module to the third sensor; and

transmitting an acknowledgement of the alarm table from the third sensor to the computing system of the process module.

15 9. The computer implemented method, as recited in claim 8, further comprising the steps of:

transmitting command to get time and initialization data from the second sensor to the computing system of the process module;

20 transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the second sensor;

transmitting time and initialization data from the computing system of the process module to the second sensor;

25 transmitting an acknowledgement of the time and initialization data from the second sensor to the computing system of the process module;

transmitting command to get time and initialization data from the third sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the third sensor;

5 transmitting time and initialization data from the computing system of the process module to the third sensor; and

transmitting an acknowledgement of the time and initialization data from the third sensor to the computing system of the process module.

0 10. An apparatus for processing semiconductor related devices, comprising:  
a process chamber for processing semiconductor related devices;  
a computing system for controlling the process chamber, electrically connected to the process chamber;

a network electrically connected to the computing system;

15 a first sensor electrically connected to the network;

a connection monitor task, which is spawn in the computing system after the computing system is initialized; and

a first sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the first sensor initiates a connection with  
20 the computing system.

11. The apparatus, as recited in claim 10, further comprising:

a second sensor electrically connected to the network; and

a second sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the second sensor initiates a connection with the computing system.

5           12.    The apparatus, as recited in claim 11, further comprising:

a third sensor electrically connected to the network; and

a third sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the third sensor initiates a connection with the computing system.

10           13.    The apparatus, as recited in claim 12, wherein the first sensor, the second sensor, and the third sensor are connected as clients to the computing system of the process module.

15           14.    The apparatus, as recited in claim 13, wherein the first sensor, the second sensor, and the third sensor are hot swappable plug and play.

20           15.    The apparatus, as recited in claim 14, wherein said computing system, further comprises a heartbeat message tool which sends a heartbeat message to a sensor if the computing system does not receive a message from the sensor within a period of time.